

INTERPROCEDURAL DEAD STORE ELIMINATION

ABSTRACT

A system for optimizing computer code generation by carrying out interprocedural dead store elimination. The system carries out a top down traversal of a call graph in an intermediate representation of the code being compiled. Live on exit (LOE) sets are defined for variables at call points for functions in the code being compiled. Bit vectors representing the LOE sets for call points for functions are stored in an LOE table indexed or hashed by call graph edges. For each function definition reached in the call graph traversal, a LOE set for the function itself is generated by taking the union of the LOE call point sets. The entries in the LOE table for the LOE call point sets are then removed. The LOE set for each function is used to determine if variables that are the subject of a store operation in a function may be subject to a dead store elimination optimization.